

ART. XIII.—*Notes on Eucalypt Leaves occurring in the Tertiary Beds at Bulla.*

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(With One Text Figure).

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The fossils occur in a fine mudstone beneath the newer basalt. These leaf beds were found by Mr. James, B.Sc., last year, and contain many other leaves besides those of Eucalypts. These leaves are small, narrow and pointed, which indicates rather adverse conditions of life. These leaves are too simple for any identification work. Besides the leaves, casts were found which appeared to be of a lycopodiaceous character, and other casts appeared to be those of crushed stems. The beds appear to have been laid down along the banks of the stream. The Eucalypt leaves appear to belong to one general type. We must bear in mind, when dealing with fossil eucalypts, the wide variability of the genus at the present day, and although we cannot say whether this variability existed in geological times, still it must not be left out of account. It is recognised that to differentiate Eucalypts on herbarium material is often impossible.

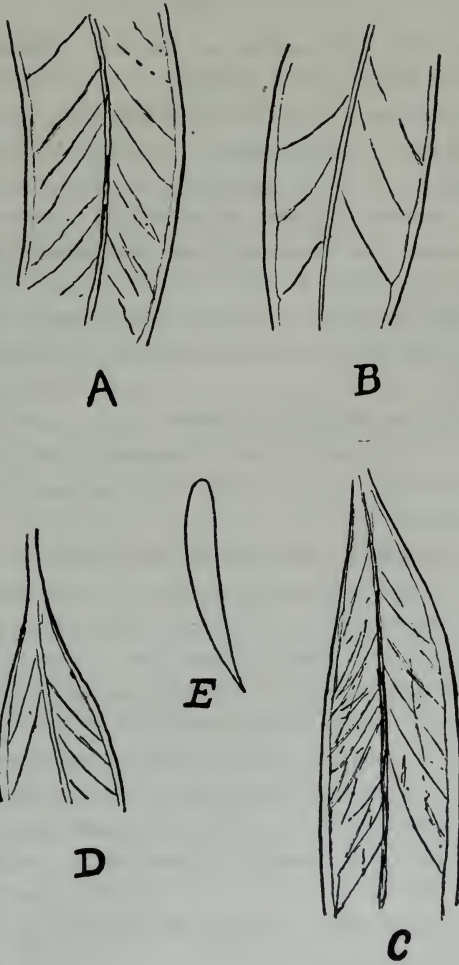
In the Geol. Survey Records, Vol. I., are given, by H Deane, M.A., some figures of fossil Eucalypt leaves from Berwick. Some of these do not possess sufficient differences to be classified as different species. These belong more or less to two general types of leaves. *Eucalyptus præcoriacea* forms an exception. This is a very doubtful Eucalypt.

All of the leaves from Bulla belong to one general type. I do not think we are justified in making species out of material which all conforms to a general type.

The leaves are moderately broad, lanceolate and slightly falcate. The marginal vein is moderately removed from the edge, and is only slightly indented. The lateral veins diverge at an angle of about 50°, and are not widely distant apart. The leaf is approximately symmetrical. The margins gradually fade into the petiole and do not meet it abruptly.

Taking these casts generally they do not differ very much from those figured in Vol. I., Geological Survey Records. The Bulla leaves bear a resemblance to those of *E. rostrata*, which is found

growing along the river close by, and if the nodules found with the leaves be fruits the resemblance is still closer, but it would be unwise to suggest that the fossils are those of *E. rostrata*. These fossils give an insight into the evolution of the *Eucalypts*. The earliest stage, represented by the *Bloodwoods*, had been passed, but how far the genus had progressed it is impossible to say from these alone.



A, B, C, D—General type of fossil *Eucalypt* at Bulla.  
E—A common leaf with the *Eucalypt* leaves.